

# USUHS Epidaurus Conference on Patient-Centered Care

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## Facility Design & Organizational Change



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23 May 2003

# "First Design the Organization, Then Design the Building!"

D. Kirk Hamilton  
*Interiors & Sources* magazine  
 Jan/Feb 2002



## HEALTHDESIGN

### First Design the Organization, Then Design the Building

A case for bringing the design process into organizational change, restructuring.

by D. Kirk Hamilton, FAIA, FACHA

I am an architect interested in learning about change management and organizational structure, behavior and culture. I believe organizational theory can be integrated with design methodology, and the design professional's role can expand to include collaboration in designing the organization, as well as the building.

#### Agents of Change

Design professionals are trained to make useable spaces in tangible forms called architecture and interior design. These forms effect significant change in the organizations with which we work, altering their structure, performance, culture and behavior. But these changes are poorly understood by design professionals and rarely described as an intended part of the project brief. We were not taught to design for these outcomes. What architects and designers need are tools and language to better describe desired organizational results, to use the design process for these purposes and methods to explain such a process to a client.

I have had projects in which physical design changed an organization for the better, even though there was no intentional design intervention to affect organizational structure. Positive change was a serendipitous design result. Yet we rarely set out with the objective of organizational change or a clear understanding of what might bring it about.

#### Learning From a Collaborative Experience

A dozen years ago, I encountered the Planetree consumer organization, which

was piloting an innovative model of patient-centered health care. My firm eventually designed a Planetree facility that radically altered the hospital model. In the process, I observed Planetree's organizational change: carefully planned training to "re-learn" the Planetree model followed deconstruction of organizational assumptions and culture. Further, institutional bureaucracy was rejected, and there was a return to fundamental philosophical principles that resonated with patients, their families and a committed staff.

That and subsequent projects taught me that the designer can offer more. As a result, I want to advance the design professional's role as an effective agent of change and partner in organizational design.

#### Implementation of Planned Change

A couple of years ago, at a Center for Health Design board meeting, someone asked why most projects have no programmatic goals related to organizational behavior and performance. That set me on a search for theory on the structure and performance of organizations, ultimately finding the relatively new social science of Organization Development (OD).

Some define Organization Development as the application of behavioral science knowledge and theory to improve organizational functioning and performance. Others simply describe it as implementation of planned change in organizations.

The field makes interventions in organizations based on a process similar to a design effort, in which goals are stated, an assessment occurs, data is gathered, a diag-


nosis or statement of the problem is made, followed by a planned intervention. New data is gathered to determine whether the intended result occurred, then further cycles of intervention and review take place until the desired change results.

Business consultants and OD professionals are involved in corporate re-engineering, operational redesign, workflow analysis and developing strategies to enhance organizational effectiveness while the design professional implements change with a physical design. Our design process can be a useful tool for organizational redesign, suggesting design professionals could be more productive partners in such consultation.

#### Social Sciences Research and Evidence-based Design

The Center for Health Design is conducting a series of important research studies called the "Pebble Projects" to establish with scientific rigor the relationship between facility design and any of several measurable outcomes, including clinical, economic, performance, satisfaction and philanthropic criteria. I am struck by the correlation between these outcome measures and the types of social sciences research performed in the world of OD. I am convinced this kind of research will support the concept of evidence-based design and help make the case for the environment's role in organizational effectiveness and performance.

I am a committed functionalist and practitioner of evidence-based design. As a board certified architect specializing in health care, "form follows function" is the

lays in organizations. Likewise, and interior designers must learn to interact more often with organization professionals to best serve common clients. 

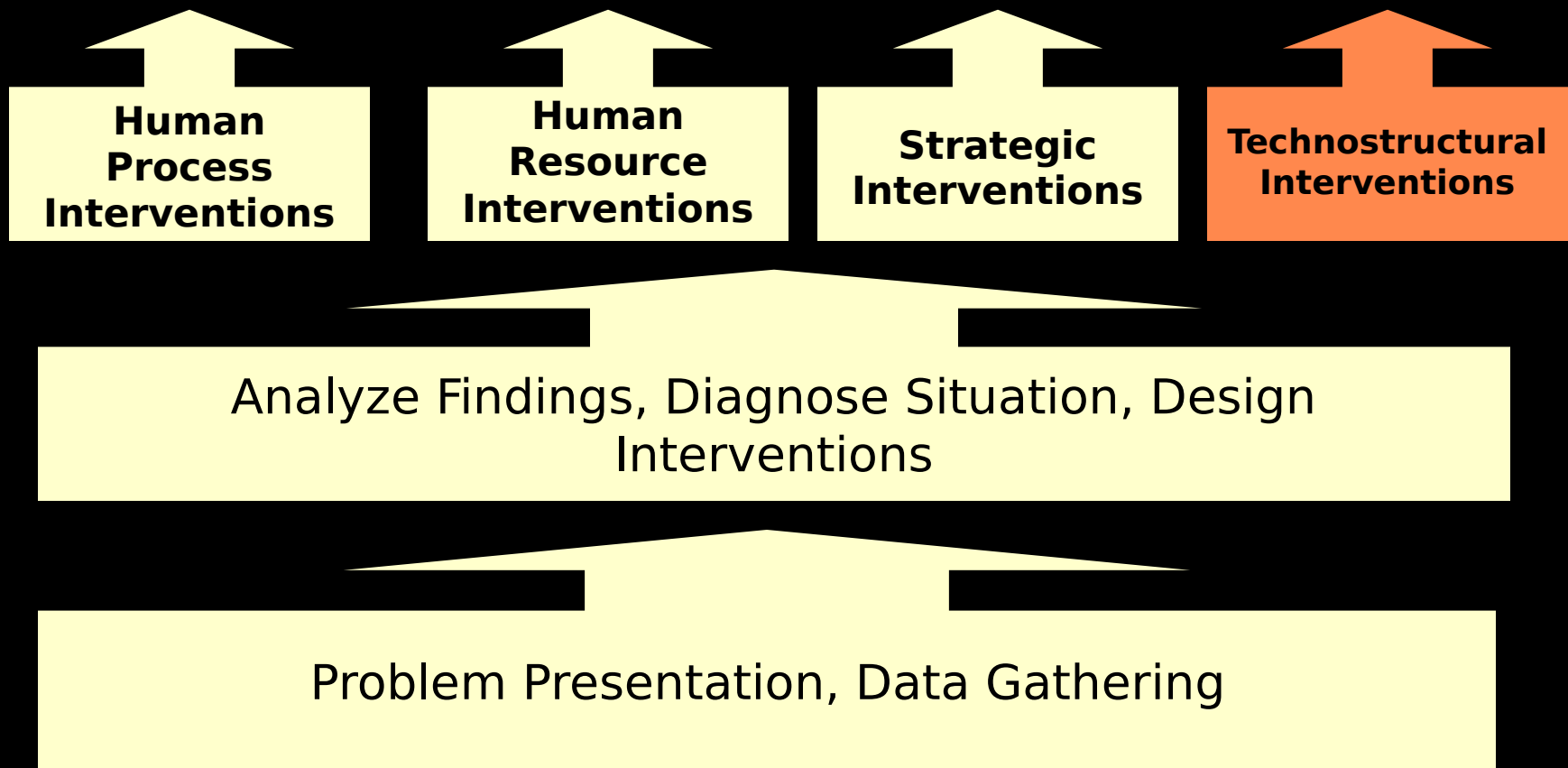
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# Organization Development

- *A system wide application of behavioral science knowledge to the planned development, improvement, and reinforcement of the strategies, structures, and processes that lead to organizational effectiveness.*

Cummings, TG & CG Worley. (2001) *Organization Development & Change* (7<sup>th</sup> ed.), Southwestern College Publishing: Cincinnati

# Improved Organizational Efficiency & Effectiveness





# Improved Organizational Efficiency & Effectiveness

**Engineering  
Models**

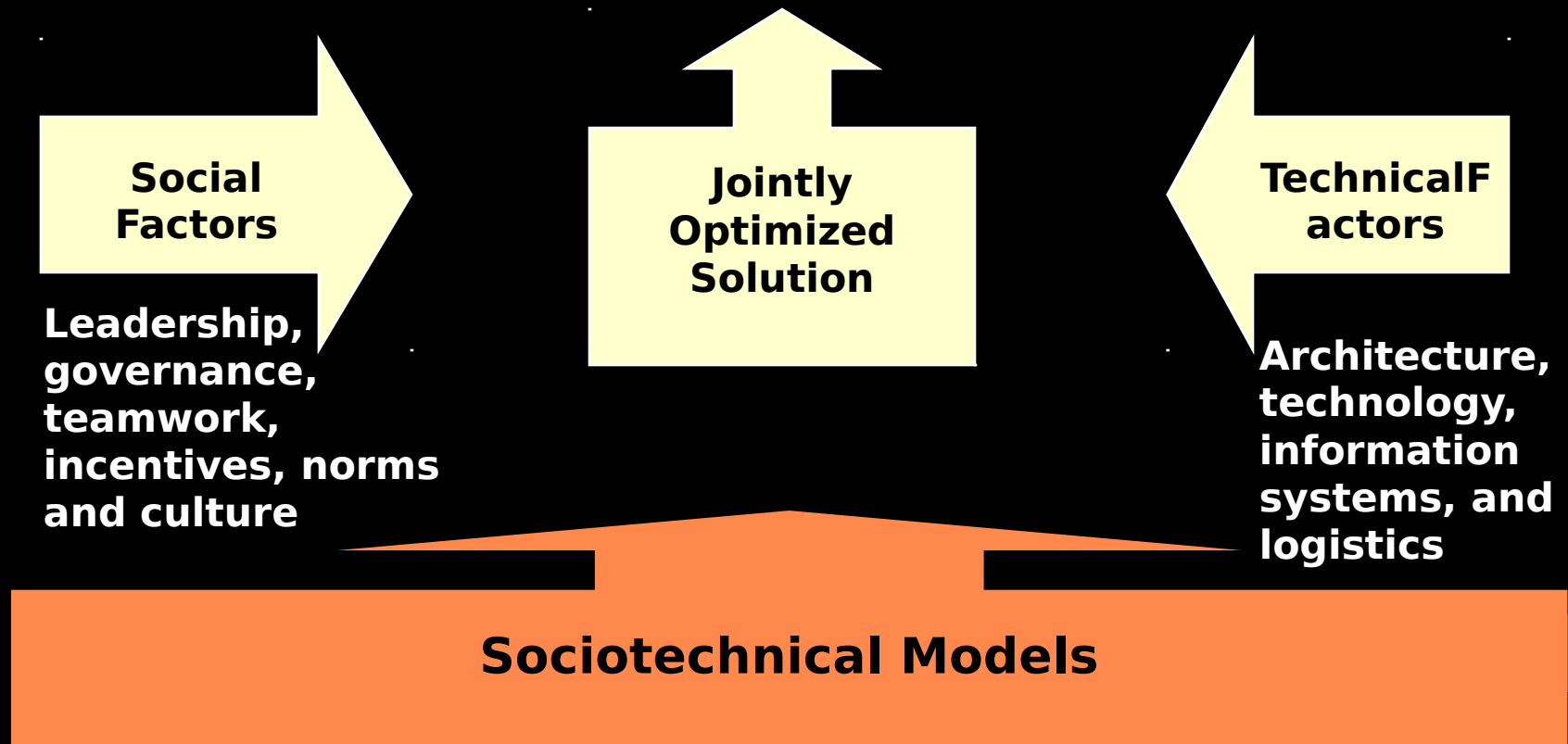
**Motivational  
Models**

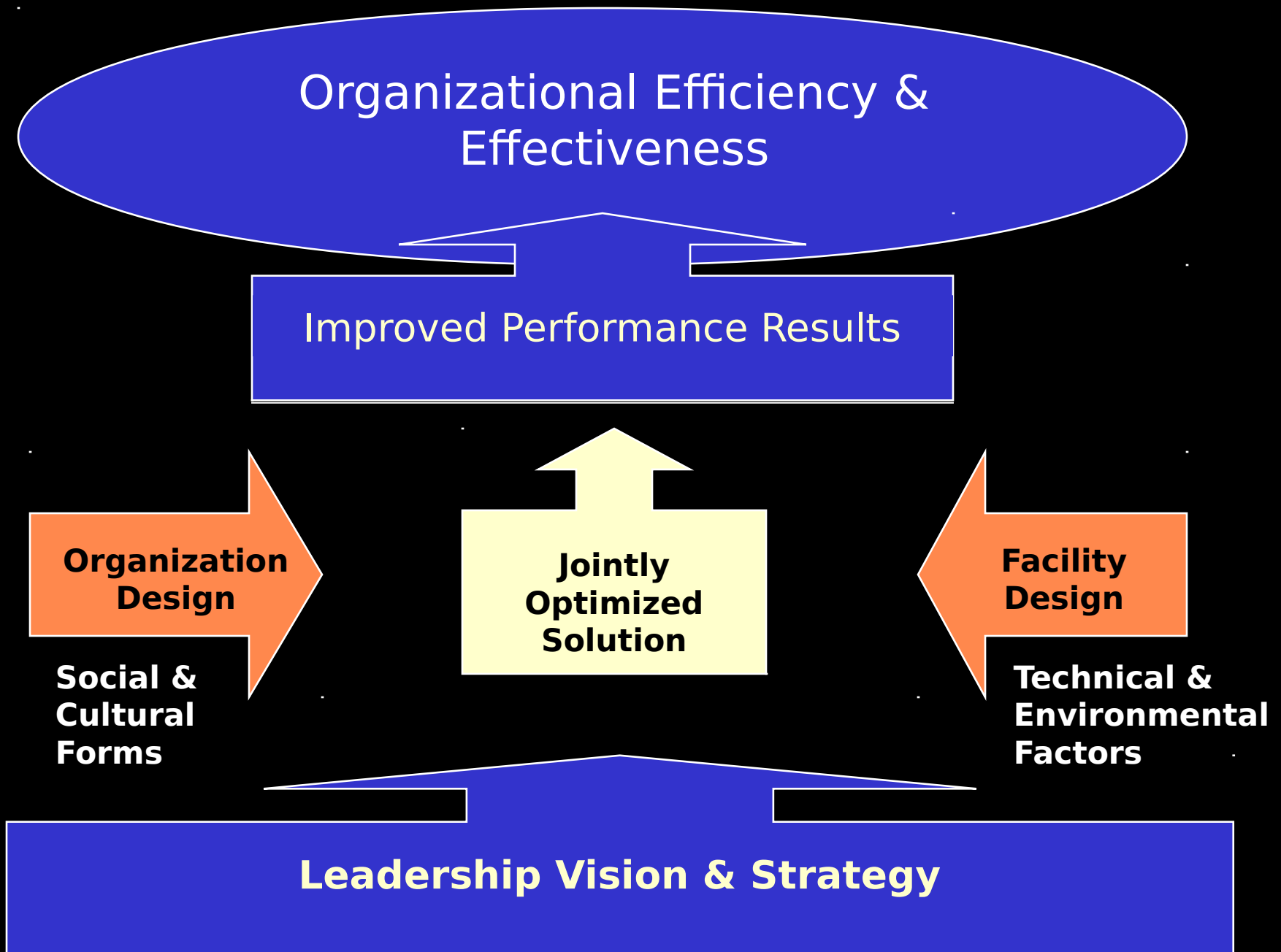
**Sociotechnical  
Models**

**Work Design Interventions**

**Technostructural Interventions**

# Improved Organizational Efficiency & Effectiveness





# Organization Structure

USUHS Epidaurus

Conference

- Process Consultation Model
  - Participatory Methodology
- Vision Sessions
- Synergy of Organization Design & Facility Design
  - Joint Optimization of Technical & Social Systems
  - Process Redesign
  - Work Redesign

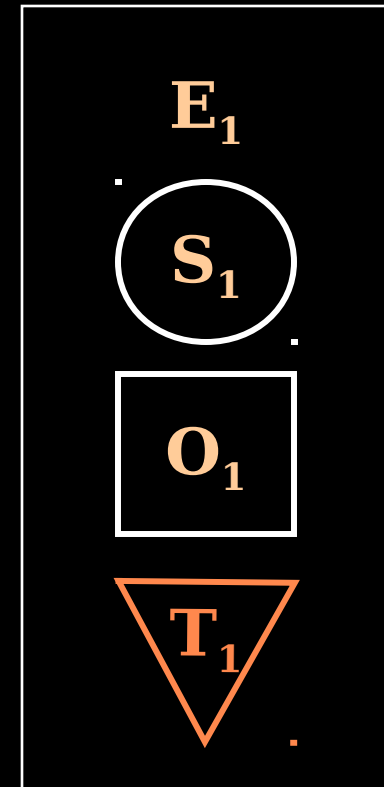




# Organization Structure

- Align the Elements
  - Environment
  - Strategy
  - Organization
    - Structure
    - Culture
  - Technology
    - Medical Technologies
    - Systems
    - Facilities

Current  
external  
context  
at  
strategy  
Current  
structure,  
resources,  
S,  
&  
**Current  
technology  
&  
facilities**



# The ESOT Model

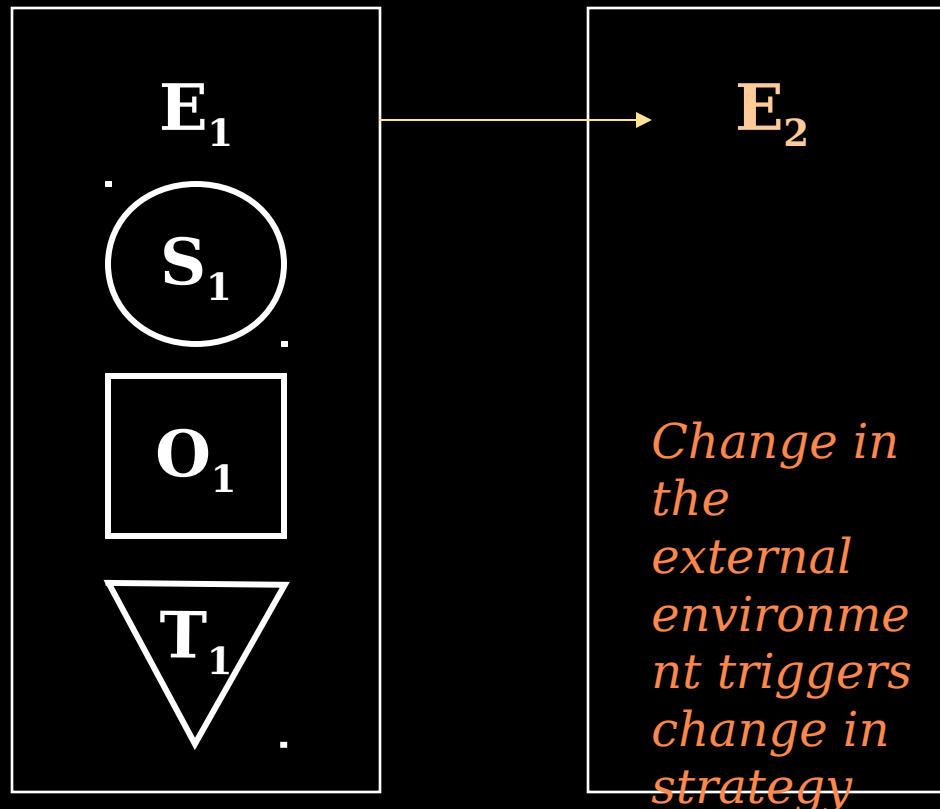
## Adapting the ESO Model to Socio-Technical T

USUHS Epidaurus  
Conference

Current  
external  
context  
Current  
strategy

Current  
org.  
structure,  
resources,  
& culture

Current  
technology  
&  
facilities



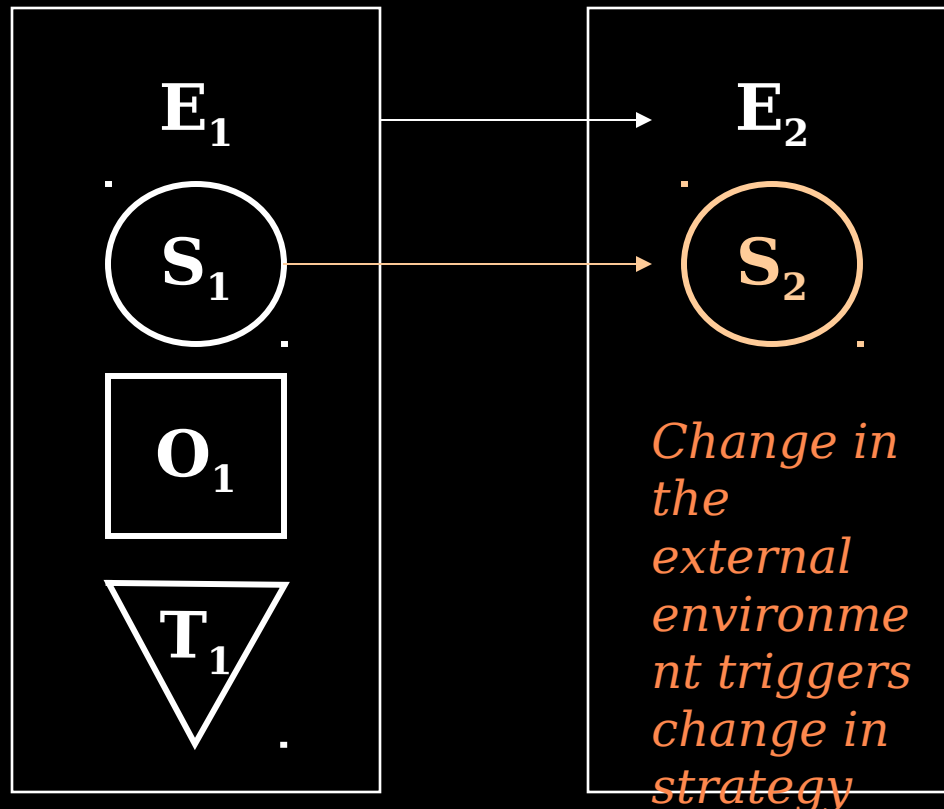
Future  
external  
context

# The ESOT Model

## Adapting the ESO Model to Socio-Technical T

USUHS Epidaurus  
Conference

Current external context  
Current strategy  
Current structure, resources  
& culture  
Current technology & facilities



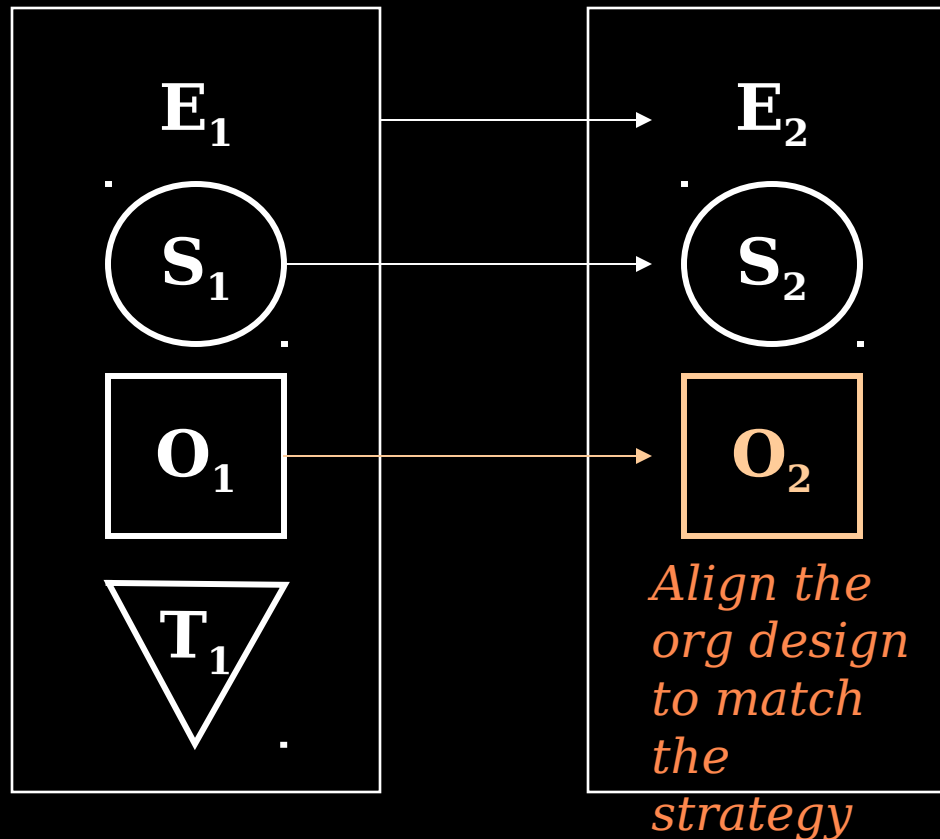
Future external context  
Future strategy

# The ESOT Model

## Adapting the ESO Model to Socio-Technical T

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Current external context  
Current strategy  
Current structure, resources  
& culture  
Current technology & facilities



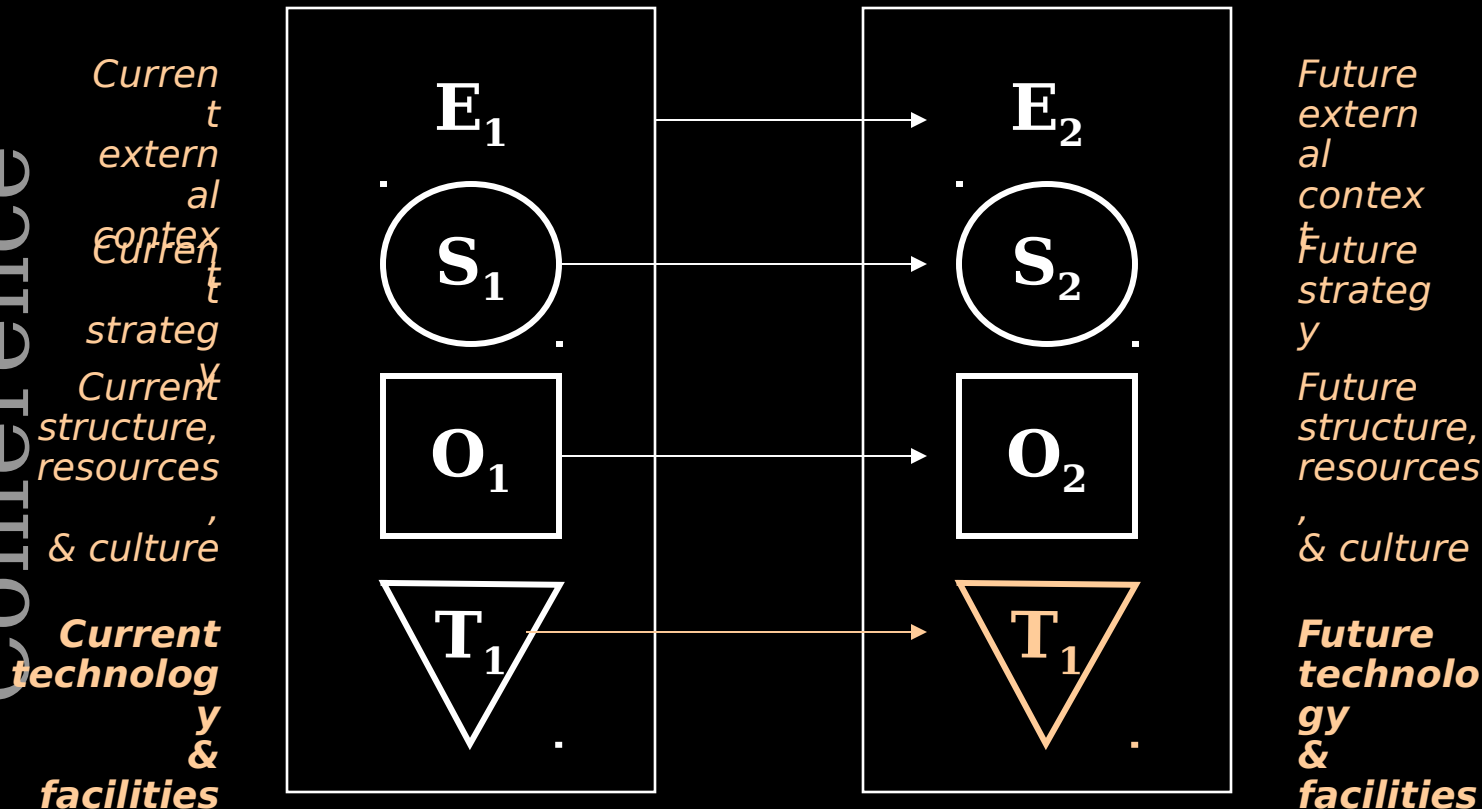
Future external context  
Future strategy  
Future structure, resources  
& culture



# The ESOT Model

## Adapting the ESO Model to Socio-Technical T

USUHS Epidaurus  
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*Align the facilities & technology to support the org design & strategy*

# Operational and Staffing Efficiency

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- Shorten Length of Stay
- Transfer Patients to Lower Cost Settings
- Patient-focused economics
- Operational redesign
- Staffing efficiency; matched to volumes
- Logistical efficiency
- Adaptable & convertible flexibility
- Work Process Reconfiguration
- Leverage Computers to Shrink Work
- Simplify Documentation
- Cross-Trained Staffing
- Reduce Structured Idle Time
- Eliminate Departmental Barriers
- Facility Design as an Enabler

Staff Costs Can Be 60% of Annual Budget

# Nursing Satisfaction

- Design Plays a Significant Role in Nurse Satisfaction
- To the Nurse, Improved Efficiency Means More Quality Patient Contact Hours...

*Not Reduced FTEs !*



# Organization Structure

- Organization Design

- Ambulatory Dominant Campus
- Multi-Modality Diagnostic Center
- Multi-Modality Procedure Center
- Integrated Physician Practices
- Centers of Excellence

- Organizational Culture

- Patient & Family-Centered Care
- Healing Environment
- Shared Governance





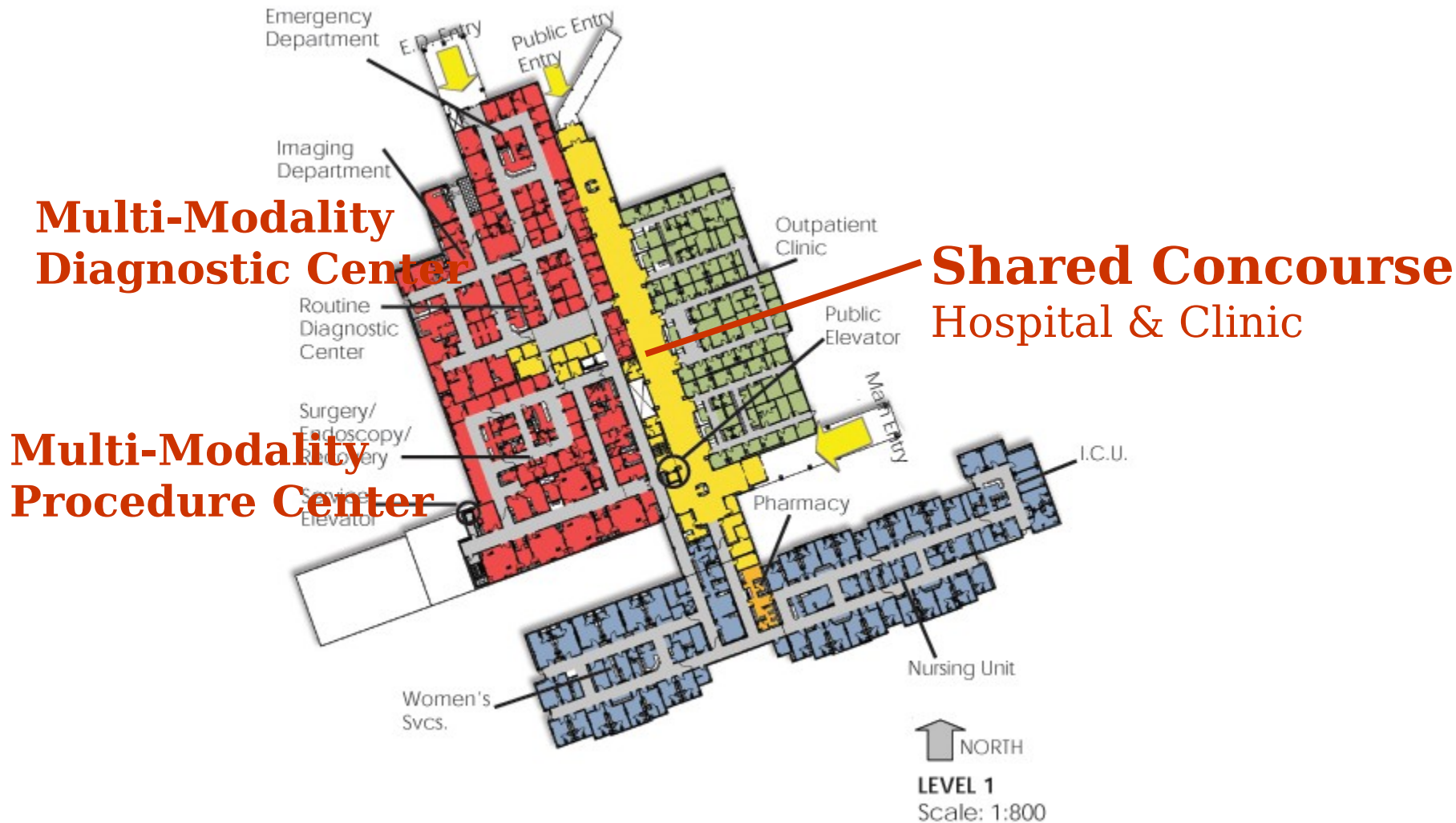
# Valley View Medical Center

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Conference

- Total Replacement
- Organizational Redesign
  - 35 Departments Before
  - 12 Departments After
- Integrated Physicians
- Planned for Growth
- Rural Community
  - Regional Materials



# Valley View Medical Center





# Valley View Organizational Redesign

**BEFORE**  
**35**  
**departments**

**AFTER**  
**12**  
**departments**



# CHRISTUS St. Michael Health Center

- Total Replacement
  - Diagnostic Center
  - Procedure Center
  - Decentralized Nursing
- Therapeutic Garden

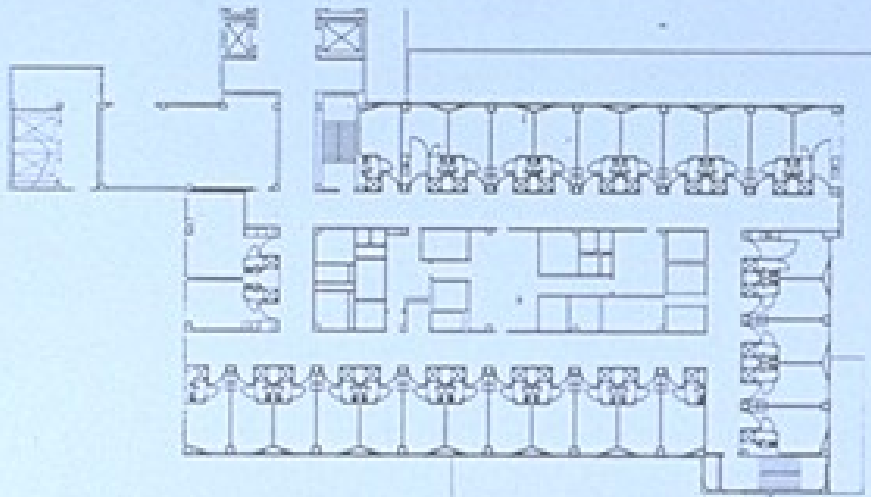




# PATIENT CARE INNOVATION

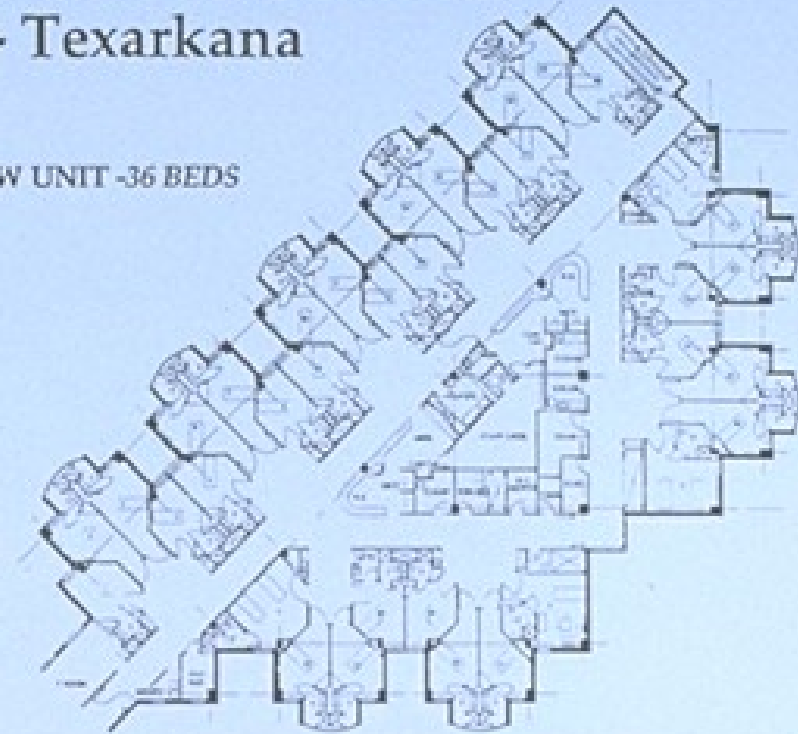
## St. Michael Hospital - Texarkana

EXISTING UNIT - 30 BEDS



AVERAGE ROOM SIZE - 180 SQ. FT.  
MAXIMUM TRAVEL DISTANCE - 99 FEET  
AVERAGE TRAVEL DISTANCE - 58 FEET

NEW UNIT - 36 BEDS

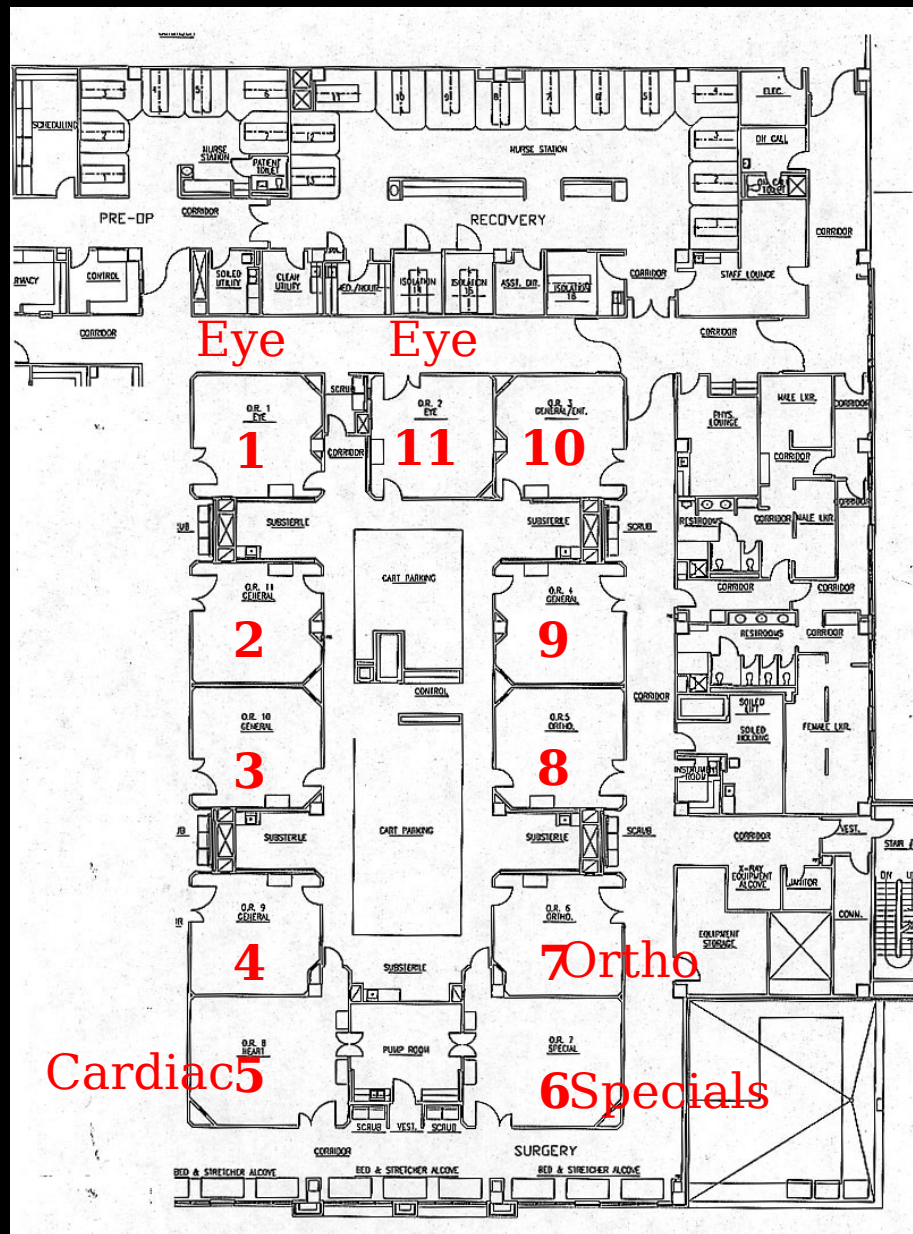


AVERAGE ROOM SIZE - 241 SQ. FT.  
MAXIMUM TRAVEL DISTANCE - 77 FEET  
AVERAGE TRAVEL DISTANCE - 53 FEET

**5 new units replace 6**

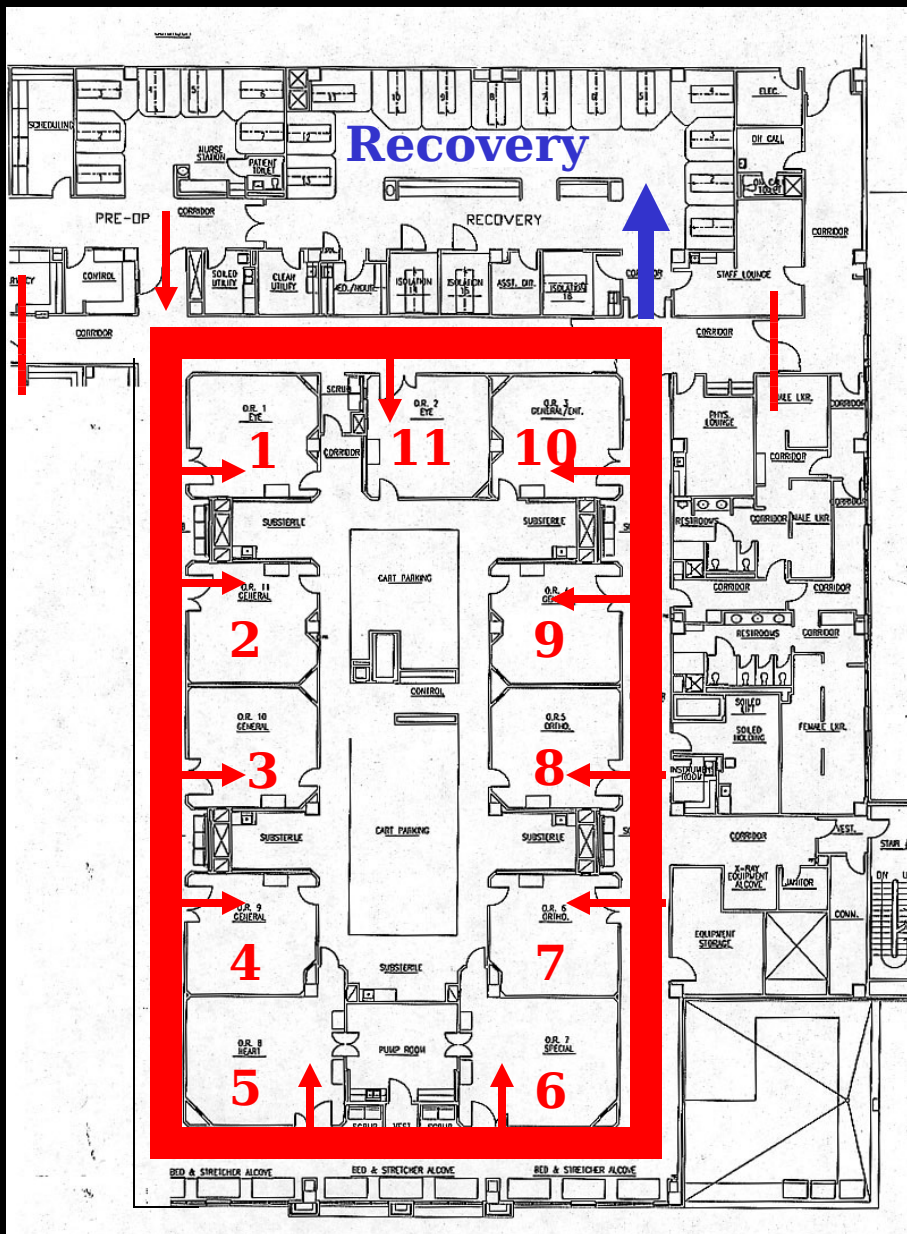
Reduce 1 mgr. per shift = \$240,000 per year savings

% larger pat. rooms, 10% reduction in avg. travel distance, 12% reduction in FT



## St. Michael Health Care Center Surgery Suite

Room Location:  
Long procedures at rear of suite  
Rapid procedures at front

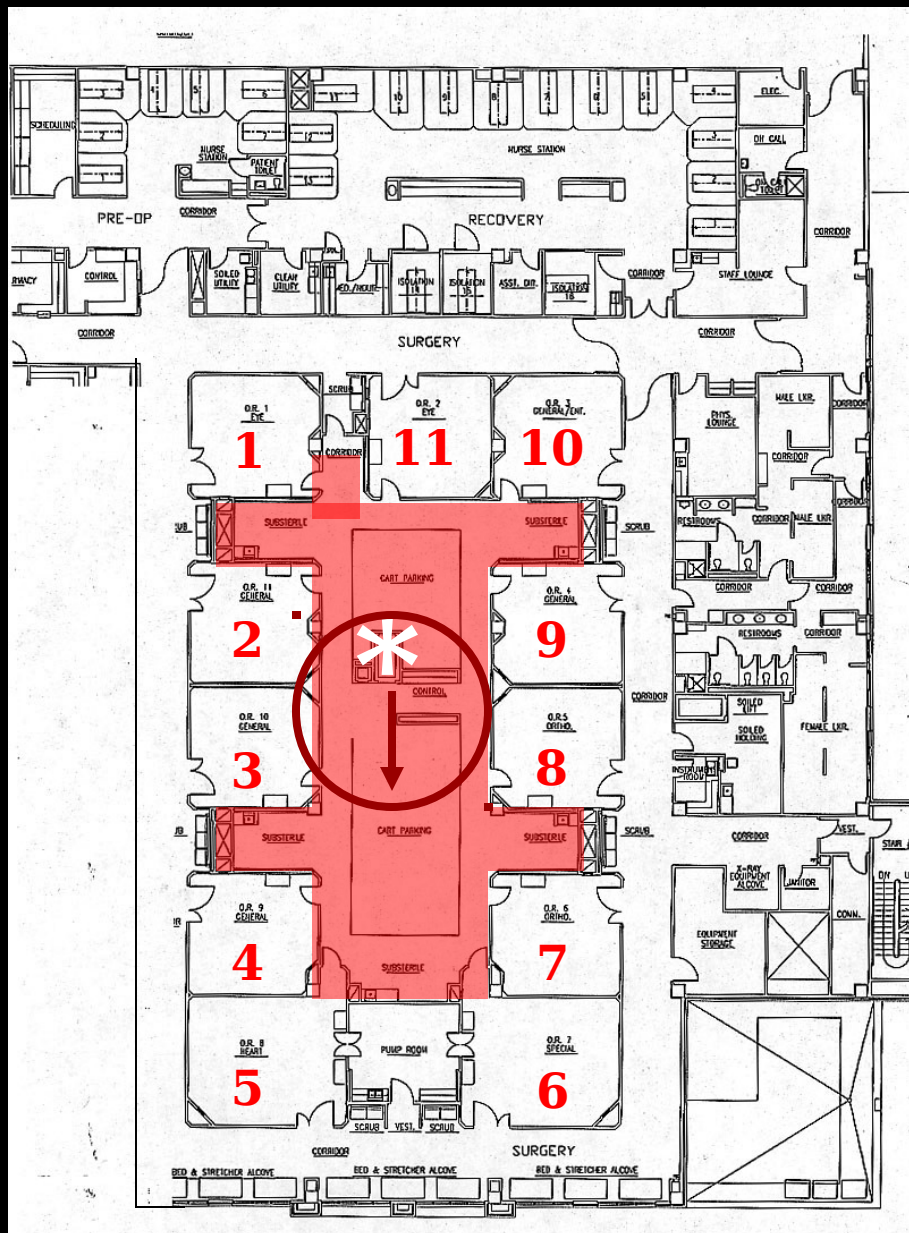


# St. Michael Health Care Center Surgery Suite

## Patient Flow:

From Pre-Op Holding  
Enter OR from “Grey” Corridor





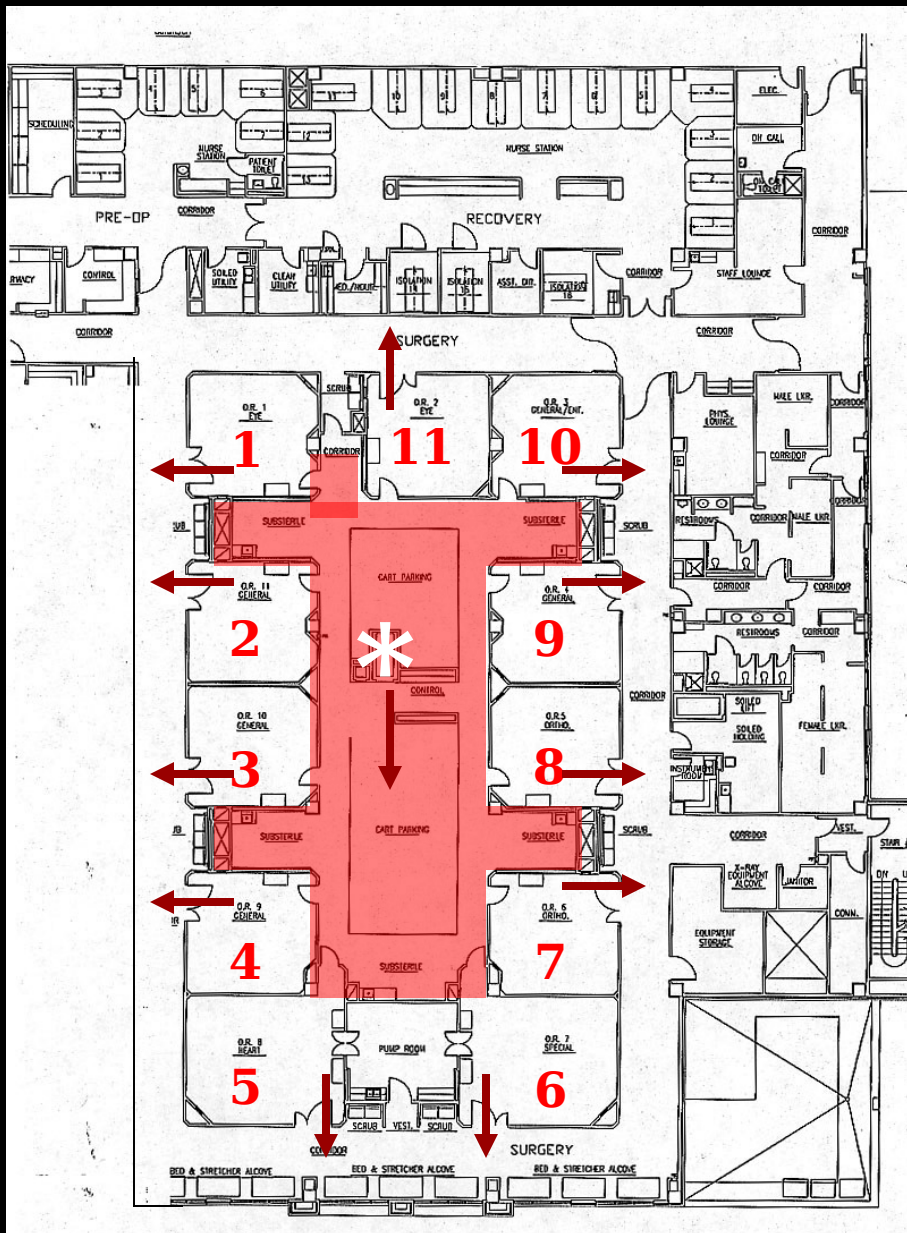
## St. Michael Health Care Center Surgery Suite

Sterile Core:  
Case carts from CSS  
Clean lift



## St. Michael Health Care Center Surgery Suite

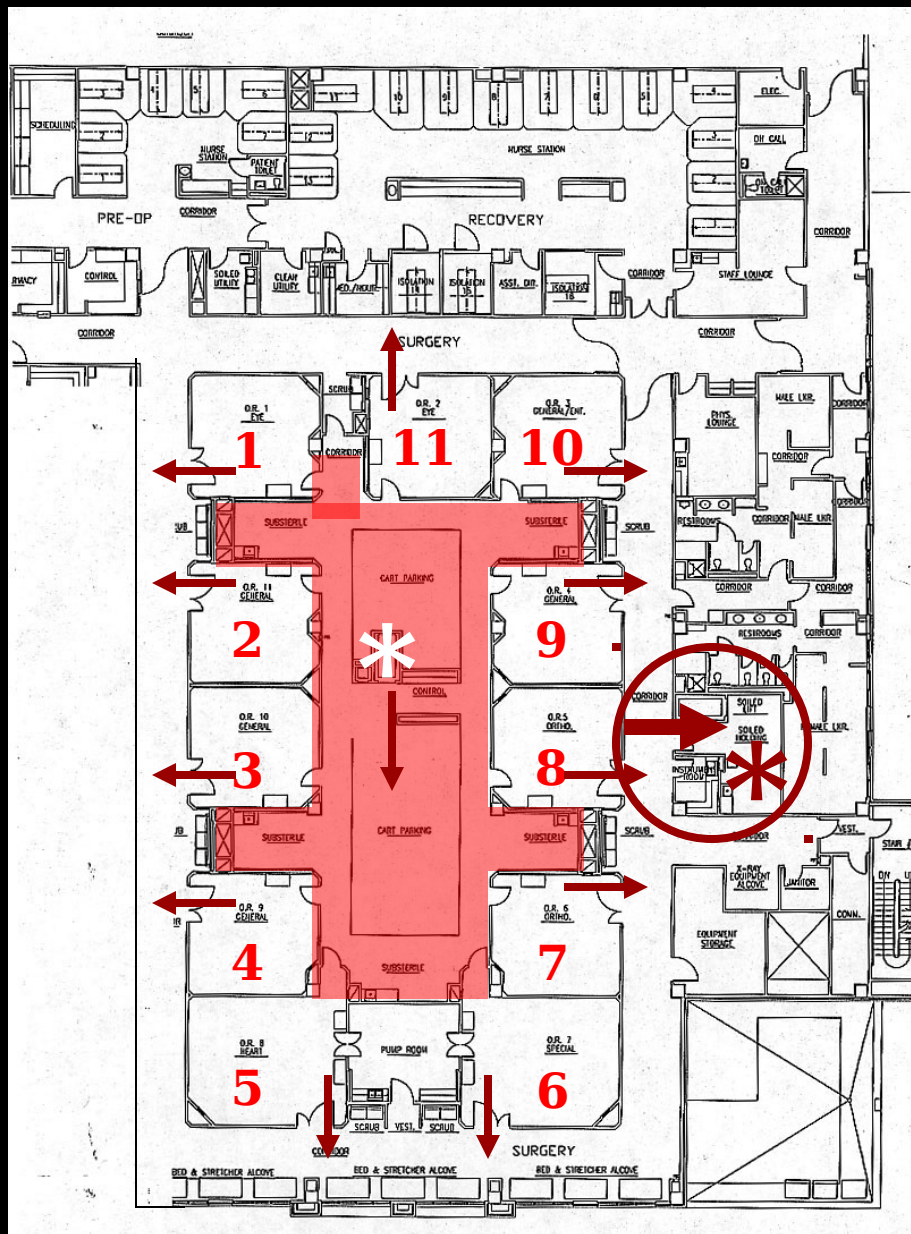
Sterile Core:  
Case carts from CSS  
Clean lift  
Carts enter OR directly



# St. Michael Health Care Center Surgery Suite

Sterile Core:  
Case carts from CSS  
Clean lift  
Carts enter OR directly  
Soiled carts to perimeter





## St. Michael Health Care Center Surgery Suite

**Sterile Core:**  
Case carts from CSS  
Clean lift  
Carts enter OR directly  
Soiled carts to perimeter  
Soiled lift outside perimeter  
Carts, instruments to CSS

# Trinity Medical Center

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- Planetree Demonstration Unit





# Harbor Hospital

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- Financial Turnaround
- Transformational Change
  - Facility Design
  - Philosophy of Care
- Family-Centered Care



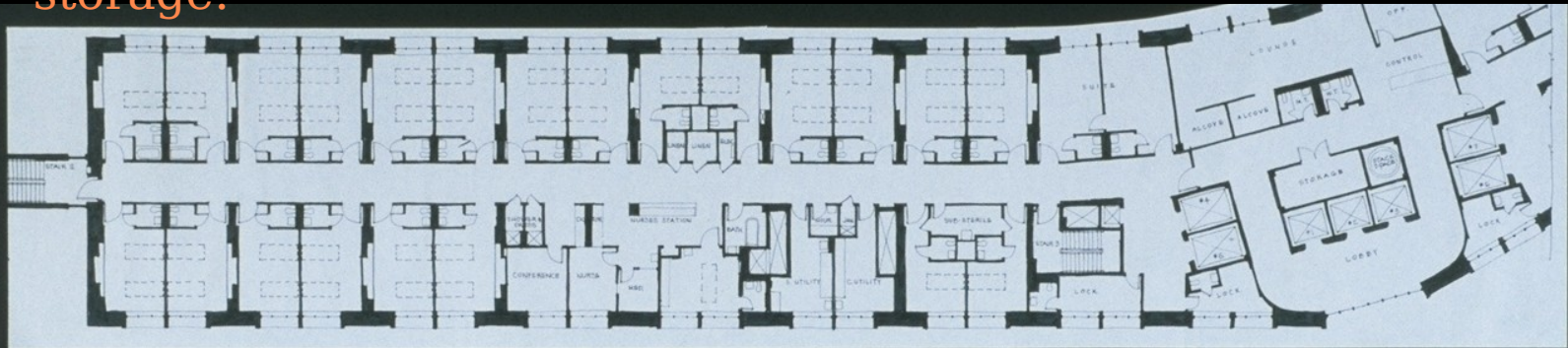


# **Architectural Programming and Design Goals**

- **Creating surroundings in which patients, families and staff can find comfort, privacy and pleasure.**
- **Providing spaces and spatial relationships that support a participatory approach to patient care and encourage patient education and empowerment.**
- **Supporting experiences of the healing qualities of pleasure, nature, the arts, entertainment and the human spirit.**



A double loaded corridor, single nursing station, inadequate room sizes & absence of space for support functions or storage:



EXISTING 4TH FLOOR PLAN - BEFORE RENOVATION



NEW 4TH FLOOR PLAN - AFTER RENOVATION

Redesign reduced the number & enlarged patient rooms, decentralized nursing functions, provided utility & storage space, family support space & a central Great Room.

# Harbor Hospital

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*Carpet, warm materials  
& indirect lighting*

*Rounded shapes in the  
carpet, alcoves &  
curves in the wall*

*Ceiling treatment  
breaks the impression  
of long straight  
corridor*



**Before**





# Harbor Hospital

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*Aquarium & custom fabric-covered  
benches contrast with the former  
institutional character*

# Harbor Hospital

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*Decentralized  
positions in alcoves  
related to clusters  
of six beds move  
the most frequent  
nursing functions  
closer to the  
bedside, increasing  
staff productivity  
and quality of care*



# Harbor Hospital

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## Major Design Concepts

- *Transformation through renovation*
- *Break the institutional grid*
- *Provide warmer, less institutional feel*
- *Interface family support amenities*
- *Improve the tech support for clinical staff*
- *Decentralize care closer to the bedside*
- *Introduce education training*
- *Provide “off-stage” environment for staff*
- *Bring services to the patient where possible*





# PATIENT CENTERED CARE

## *Values*



Our team of health care professionals is dedicated to providing every patient with our highest quality of care, centered around their needs and preferences.



We encourage all patients to participate actively in decisions regarding their care and health care needs.



We are committed to providing our patients, their family members and our community with information that is understandable and helpful to their health and well being.



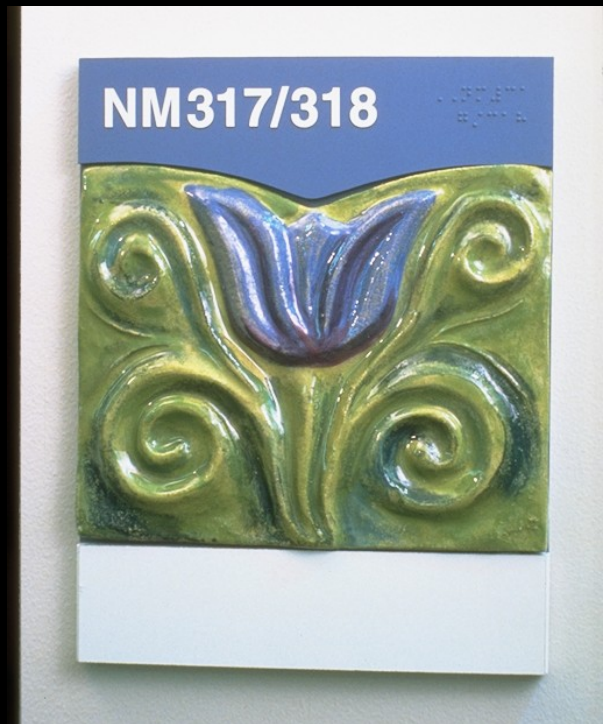
We acknowledge the individual differences of our patients and their families and are dedicated to responding to their personal needs.



# Harbor Hospital

*Part of the design to alter character of the unit was room identification.*

*Four different ceramic pieces with nautical themes reinforce the uniqueness of the hospital's relationship to the harbor.*



# Harbor Hospital

*Part of the family centered model was the relocation of admitting to the unit.*

*Admitting takes place at the bedside, with a central location for staffers on each floor, with waiting, reception and a place for clerical workers.*



# Harbor Hospital

*The full kitchen allows family members to prepare meals for patients, as well as providing a space for dietary instruction.*

*The aroma of food preparation & the opportunity to provide familiar food enhances the residential atmosphere.*

*The ability to offer dietary training supports the clinical mission.*





# Harbor Hospital

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*Two former patient rooms were converted to create a Great Room. This area near the middle of the unit is open and inviting. It includes an activity area designed to feel like a den, with a full kitchen, a quiet room and a library.*

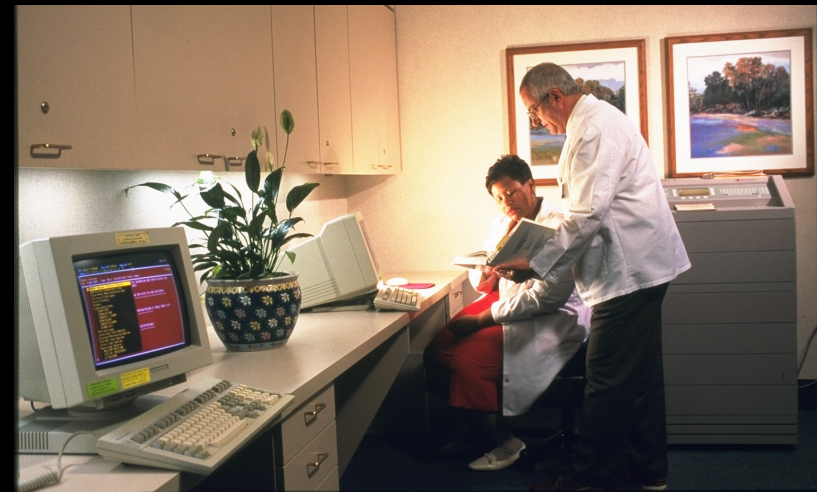
*More than a lounge, it supports the model of care delivery to help inform the patient, reduce anxiety and overcome the positive power of social and family support*



# Harbor Hospital

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*The former nurse station is now a workstation where staffers such as physical therapists, pharmacists, respiratory technicians, social workers, clergy, and dieticians have a place to work and interact on the unit.*



# Harbor Hospital

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*New model of care delivery is based strongly on respect and dignity for patients and staff*

*Locker room designed to provide a space for “off-stage” retreat from the pressure of continuous stress*





# Harbor Hospital

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*Staff were provided technological advantages to increase productivity.*

*Previous units:*

*1 computer for 44 patients*

*Redesigned units:*

*26 computer devices for 24 patients.*



# Harbor Hospital

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- Work redesign
  - Brenda's role has changed completely
  - Job enrichment
  - Pride in the work
- Improved patient satisfaction





# Evidence-Based Design

- Measures to Evaluate the Impact of Design
  - Economic
  - Clinical
  - Satisfaction

- Physiological Impact of Environment

- Haya Rubin, MD at Johns Hopkins
- Psycho-NeuroImmunology

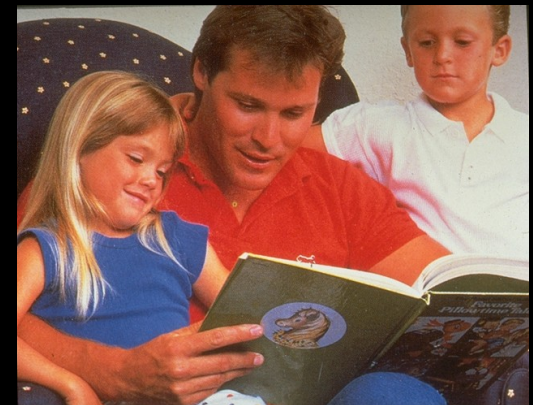
- Correlation of Design with Outcomes

- Roger Ulrich, Ph.D at Texas A&M
- Reduction of Stress
- Provision of Choice
- Positive Distraction, Access to Nature

# Family Issues

## *Evidence-Based Implications for Design*

- Assurance
  - Places for discussion in room
  - Consultation on unit
  - Appearance can signify caring
- Proximity
  - Nearby waiting area available
  - Phone notification system, beepers
- Information
  - Access to library or resource center
  - Internet connection
- Comfort
  - Waiting area amenities
- Support
  - Private space for a family to be alone



# Conclusion

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- Transformational change is possible
  - Jointly optimize the social and technical systems of the organization
- Social science-based interventions
  - Align organizational structure & culture
  - Develop efficient technical & information systems
- Evidence-based design
  - Provide supportive facility design
- Synergy of collaboration

# Conclusion

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- Coordinated interventions
  - Improve physical & technical work *environment*
  - Positive change in social & cultural aspects of work *experience*
- Purposeful design of *both* physical & social environment